

Application No.: 10/658236
Docket No.: UC0013USNA

Listing of Claims

1. (Currently Amended) An organic electronic device comprising a first electrode, a second electrode, and an organic active layer, wherein:

the first electrode lies on an opposite side of the organic active layer compared to the second electrode; and

at least one layer selected from the first electrode, the second electrode, a hole-transport layer, an electron-transport layer, and the organic active layer, wherein the at least one layer has a range of thickness thicknesses between thickness d_1 and thickness d_2 to achieve $L_{background}$ of 30 % or less of incident ambient light, wherein d_1 and d_2 are determined by:

$$2\eta d_1 [\cos(\theta) + \cos(\phi)] = (m+1/4)\lambda \quad (\text{Equation 1})$$

$$2\eta d_2 [\cos(\theta) + \cos(\phi)] = (m+3/4)\lambda \quad (\text{Equation 2})$$

wherein:

η is a refractive index of a material of the at least one layer at a specific wavelength (λ);

d_1 is a first thickness of the at least one layer;

d_2 is a second thickness of the at least one layer;

θ is an angle of incident radiation;

ϕ is a total phase change of radiation reflected by an ideal reflector at λ , and can be further expressed as $\Delta\phi(\lambda/2\pi)$;

m is an integer; and

λ is the specific wavelength.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Currently Amended) An organic electronic device comprising:

an organic active layer; and

a first electrode having a side opposite the organic active layer, wherein:

the first electrode comprises a first electrode layer lying at the side opposite the organic active layer; and

the first electrode layer has a range of thickness thicknesses between thickness d_1 and thickness d_2 to achieve $L_{background}$ of 30 % or less of incident ambient light, wherein d_1 and d_2 are determined by:

$$2\eta d_1 [\cos(\theta) + \cos(\phi)] = (m+1/4)\lambda \quad (\text{Equation 1})$$

$$2\eta d_2 [\cos(\theta) + \cos(\phi)] = (m+3/4)\lambda \quad (\text{Equation 2})$$

wherein:

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η is a refractive index of a material of the first electrode layer at a specific wavelength (λ);

d_1 is a first thickness of the first electrode layer;

d_2 is a second thickness of the first electrode layer;

θ is an angle of incident radiation;

ϕ is a total phase change of radiation reflected by an ideal reflector at λ , and can be expressed as $\Delta\phi(\lambda/2\pi)$;

m is an integer; and

λ is the specific wavelength.

6. (Previously Presented) The organic electronic device of claim 5, further comprising a second electrode, wherein:

the organic active layer lies between the first electrode and the second electrode;

a second electrode has a side opposite the organic active layer; and

the second electrode comprises a second electrode layer lying at the side opposite the organic active layer; and

wherein the second electrode layer has a thickness to achieve $L_{background}$ of 30 % or less of incident ambient light.

7. (Canceled)

8. (Canceled)

9. (Canceled)

10. (Previously Presented) The organic electronic device of claim 5, wherein an interfacial reflectivity is no greater than about 30 percent, wherein the interfacial reflectivity is determined by:

$$R = \frac{I_{reflected}}{I_{incident}} = \left(\frac{\eta_x - \eta_y}{\eta_x + \eta_y} \right)^2 \quad (\text{Equation 3})$$

wherein:

η_x is a refractive index of the first electrode layer; and

η_y is a refractive index of a material lying immediately adjacent to the first electrode layer.

11. (Previously Presented) The organic electronic device of claim 5, wherein the first electrode layer comprises a metal selected from a transition metal and an elemental metal.

12. (Original) The organic electronic device or process of claim 11, wherein the metal is selected from a group consisting of Au, Cr, Si, and Ta.

13. (Original) The organic electronic device or process of claim 11, wherein the first electrode layer further comprises an oxide of the metal.

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14. (Canceled)
15. (Canceled)
16. (Canceled)
17. (Canceled)
18. (Canceled)
19. (Currently Amended) The organic electronic device of claim 1 or 5, wherein the organic electronic device is selected from the group of light-emitting displays, radiation sensitive devices, photoconductive cells, photoresistors, photoswitches, photodetectors, phototransistors, and phototubes.
20. (New) The organic electronic device of claim 5 wherein the organic electronic device is selected from the group of light-emitting displays, radiation sensitive devices, photoconductive cells, photoresistors, photoswitches, photodetectors, phototransistors, and phototubes.